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OAK RIDGE, TENNESSEE 37830

September 1, 1967

Dr. Joshua Lederberg
Department of Genetics
Stanford University School of Medicine
Stanford Medical Center
Palo Alto, California 94304

Dear Dr. Lederberg:

Thank you very much for the copy of your column. I was particularly pleased to see that your interest in this area is continuing at a high level.

In the last few months, we have gone over largely to TMV in attempts to add synthetic information to the RNA and search for induced poly-amino acids in infected plants. The early results seem most encouraging, as when we add poly-U to the virus RNA we get an increase in phenylalanine content in a relatively insoluble fraction when poly-phe is supposed to be over control material from plants infected with normal TMV-RNA. Our poly-A addition to the virus RNA is coming along faster as poly-lysine is easier to work with. We are getting a diminution in the free lysine pool in plants infected therewith, and are in the midst of trying to isolate the poly-lysine as such. It is interesting that the protein coat of the virus isolated from poly-A,TMV-RNA infected plants has about three times the amount of lysine reported in Knight's previous work with TMV.

There is a mutant of the Shope papilloma virus which Shope designated the "recoverable line", it being recoverable from tumors induced in domestic rabbits in contrast to the wild type. These tumors have less arginase activity, and the purified enzyme is separable from that induced with wild-type virus using carboxy-methyl cellulose columns. Its molecular weight is the same as wild type though it tends to aggregate in the centrifuge, a quality the wild type virus induced enzyme does not have. Its M' in ORD

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is about a third less than the wild type induced enzyme. These results are consistent with the interpretation that the mutation was related to the structure of the enzyme and that its synthesis is from virus coded information. We hope to have enough for significant peptide analyses soon.

You may also be interested in that the Shope also lowers the blood arginine in rats. We are testing mice, dogs, and in conjunction with another laboratory baboons and monkeys, but have no data yet.

If we can tie up the poly-A work, it will be worthwhile to try to put some meaningful information on TMV.

With best regards and thanks again for your interest.

Sincerely yours,

Stanfield Rogers
Biology Division

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